OCT 0 4 1994

GRIFFIN INTERNATIONAL INC

September 26, 1994

Mr. Donald Chamberlain
Chamberlain Bus Service
PO Box 512
Lyndonville, Vermont 05851

RE: Report on the Investigation of Subsurface Petroleum Contamination at Chamberlain Bus Service, Lyndon, Vermont

Dear Mr. Chamberlain:

Enclosed, please find the report on the Investigation of Subsurface Petroleum Contamination at the above referenced site.

Griffin is pleased to have conducted this work for you. If you have any questions regarding the report or if we can be of assistance to you, please call.

Sincerely,

Laurie T. Reed

Laurie T. Reed,
Project Geologist

P.O. Box 943 • Williston, VT 05495 • 802-865-4288

REPORT ON THE INVESTIGATION OF SUBSURFACE PETROLEUM CONTAMINATION

AT

CHAMBERLAIN BUS SERVICE
SOUTH WHEELOCK ROAD
LYNDON, VERMONT

UST FACILITY #6268043

SEPTEMBER 1994

PREPARED FOR:

CHAMBERLAIN BUS SERVICE, INC.
PO BOX 512
LYNDONVILLE, VERMONT 05851

PREPARED BY:

Griffin International Inc.
PO Box 943 / 19 Commerce Street
Williston, VT 05495
(802) 865-4288

Griffin Project #6944539

TABLE OF CONTENTS

I. INTRODUCTION

This report describes the investigation of residual subsurface petroleum contamination at the Chamberlain Bus Service facility located off Wheelock Road in Lyndon, Vermont. This investigation was conducted by Griffin International Inc. (Griffin) for Chamberlain Bus Service, Inc. (Chamberlain) of Lyndonville Vermont. This investigation was initiated by Chamberlain by entering the State of Vermont Site Investigation Expressway Program after the presence of residual subsurface petroleum at the site was identified during the removal of a 4,000 gallon capacity underground storage tank (UST) at the site on June 24, 1994. An Expressway Notification was issued to the State of Vermont Department of Environmental Conservation (VTDEC) with Griffin's UST Removal Assessment dated June 28, 1994. Griffin prepared a Work Plan detailing the work performed in this assessment which was delivered to Chamberlain on June 28, 1994.

The UST removed from the site had most recently contained diesel fuel but had previously contained gasoline. During the removal of the UST, eight cubic yards of diesel fuel contaminated soil was removed from the tank excavation. The source of contamination in the area of the UST appeared to have been from overfills. Griffin installed five monitoring wells at the site using a back hoe at the time of the tank removal. The locations of the monitoring wells are shown on the Site Map in Appendix A. During the installation of MW2, located on the opposite side of the bus shed from the tank excavation and between the bus shed and the South Wheelock Branch, soil was also found to be contaminated in this area. The contamination in the vicinity of MW2 appeared to be from gasoline. An additional 70 cubic yards of petroleum contaminated soil were excavated from the area between the Bus Shed and the branch. All significantly impacted soil was excavated in the direction of the brook, but contamination remained above State of Vermont Action Guidelines at the site under the bus shed and paved area.

II. SITE DESCRIPTION

The site is located off South Wheelock Road in Lyndon, VT (See location map in Appendix A.). The site is at an approximate elevation of 240 feet above sea level. The site is gently sloping towards the south and is located in the narrow valley of the South Wheelock Branch of the Passumpsic River which is located south-southwest of and adjacent to the site approximately 110 feet from the area of the former UST. Two bus storage sheds are located at the site. The Chamberlain residence is located on a hill 250 feet north of the area of the former UST. Residences are located approximately 1000 feet west-northwest and east-southeast of the site. A total of Approximately 78 cubic yards of petroleum contaminated soil are stockpiled at the site. The site and Chamberlain Residence are served by drilled supply wells.

III. INVESTIGATIVE PROCEDURES

In order to better define the extent of subsurface petroleum contamination at the site, Griffin sampled the five monitoring wells that were installed at the time of the UST removal.

Well MW1 is located in the area of the former UST at the site to determine the extent of impact to groundwater in this location. MW2 was placed between the former area of the UST and the Wheelock Branch on determine the extent of downgradient contaminant migration. MW3, MW4, and MW5 were installed to determine if groundwater in these areas have been impacted by petroleum. The locations of the wells are indicated on the Site Map in Appendix A. Depths to groundwater were measured in all five on-site wells, and then water samples were collected from the monitoring wells for laboratory analysis. Soil samples collected from the well excavations were screened for volatile organic compounds (VOCs) with a photo ionization detector (PID) during the time of monitoring well installation.

A. Monitoring Well Installation

Five monitoring wells (MW1 MW2, MW3, MW4, and MW5) were installed on June 24, 1994 under the direct supervision of Griffin. The wells were installed using a back hoe. The wells are constructed of two inch diameter, 0.010" slot, PVC well screen and attached solid PVC riser. Each well is protected at the surface by a flush mounted steel well head protective casing and a bolt down cover. Each well head protection casing is set in cement. Well construction details are listed on the well logs in Appendix B.

B. Soil Screening

Samples were collected from the well excavations with the back hoe bucket. Samples were screened for VOCs using a PID and logged by Griffin. Subsurface materials encountered in the borings consisted mostly of well sorted silty sands underlain by well sorted sands, and finally by sand with pebbles and cobbles. The water table resided at approximately five feet below grade. No VOC concentrations were detected in the soil samples collected from the excavations of MW3, MW4, or MW5. The MW1 excavation, located in the area of the former UST, was advanced to 10 feet. VOC concentrations of 9.0 ppm were detected at 5.0 to 6.0 feet; a peak concentration of 105 ppm was detected at 6 to 7 feet in the excavation of MW1. The MW2 boring, located down-gradient from the former UST area, was advanced to 10 feet. VOC concentrations peaked at 230 ppm between 4.0 to 7.0 feet below grade. From 7.0 to 8.0 feet, VOC concentrations fell to 10 ppm. Detailed lithologic descriptions and VOC concentrations are listed on the well logs in Appendix B.

C. Water Table Measurements And Groundwater Flow

The water table elevation in each monitoring well was measured on July 21, 1994. Water table elevations are plotted on the Groundwater Contour Map in Appendix A. The map indicates that groundwater is flowing south towards the South Wheelock Branch. The average hydraulic gradient in the vicinity of the monitoring wells is estimated to be approximately 3.3 percent.

No free product was detected in any of the monitoring wells. All groundwater level data are recorded on the Liquid Level Table in Appendix C.

D. Groundwater Sampling and Analysis

On July 21, 1994, Griffin collected groundwater samples from the five monitoring wells. Laboratory results are summarized below in Table 1. Laboratory report forms are presented in Appendix D. All samples collected were analyzed according to EPA method 602 which tests for the presents of VOCs including the petroleum compounds benzene, toluene, ethyl benzene, xylenes, and methyl tertiary butyl ether (MTBE) which is an octane boosting additive used in gasoline. All samples were collected according to Griffin's groundwater sampling protocol. Analyses of duplicate, trip blank, and equipment blank samples collected during the sampling indicate that adequate quality assurance/quality control was maintained during sample collection and analysis.

Analyses of the groundwater sample collected from MW1, located in the area of the former UST, indicates no detectable petroleum compounds.

Analysis of the groundwater sample collected from MW2, located directly down gradient from the area of the former UST and the area of remaining soil contamination, indicates the presence of benzene, toluene, ethylbenzene, xylenes (BTEX), and MTBE all in concentration well above the Vermont Groundwater Enforcement Standards (VGES). Benzene is indicated in concentration of 633 parts per billion (ppb) which is above the VGES of 5.0 ppb. Toluene is indicated in concentration of 8,250 ppb which is above the VGES of 1,000 ppb. Ethyl benzene is indicated in concentration of 2,560 ppb which is above the VGES of 700 ppb. MTBE is indicated in concentration of 6,720 ppb which is above the VGES of 40 ppb.

Analysis of the groundwater sample collected from MW3, located south of the area of the former USTs and west of MW2, indicates the presence MTBE in concentration below VGES.

Analyses of the groundwater samples collected from MW4 and MW5 indicate no detectable petroleum compounds.

IV. RECEPTOR SURVEY AND RISK ASSESSMENT

Griffin conducted a visual survey of the site to identify local potential receptors of subsurface petroleum contaminants. The most likely receptor in the vicinity of this site appears to be the South Wheelock Branch located approximately 110 feet down-gradient of the former area of the USTs. The branch was inspected for signs of petroleum contamination; none was evident. All soil contaminated above 10 ppm in the area between the brook and the paved lot and bus shed areas was excavated. Soil contamination was below 10 ppm at 10 feet from the edge of the brook. Some impact to the brook from petroleum contaminated groundwater at the site has likely occurred. Removal of the contaminated soil near the branch will significantly reduce the risk of impact to this potential receptor.

The two bus sheds at the site are of concrete slab construction. The risk of VOC vapor impact to the buildings is not significant. The closest residence is located approximately 250 feet

TABLE 1.

Groundwater Quality Summary
Chamberlain Bus Service
Lyndon, Vermont

Monitoring Date: 7/21/94

All Values Reported in ug/L (ppb)

PARAMETER	Date of Sample Collection					V.G.E.S.
	MW1	MW2	MW3	MW4	MW5	
Benzene	ND>1	**633.**	ND>1	ND>1	ND>1	5.0*
Chlorobenzene	ND>1	ND>50	ND>1	ND>1	ND>1	100**
1,2-DCB	ND>1	ND>50	ND>1	ND>1	ND>1	600*
1,3-DCB	ND>1	ND>50	ND>1	ND>1	ND>1	600**
1,4-DCB	ND>1	ND>50	ND>1	ND>1	ND>1	75*
Ethylbenzene	ND>1	**2,560.**	ND>1	ND>1	ND>1	700**
Toluene	ND>1	**8,250.**	ND>1	ND>1	ND>1	1,000**
Xylenes	ND>1	**21,300.**	ND>1	ND>1	ND>1	10,000**
Total BTEX		**32,743.**				-
MTBE	ND>10	**6,720.**	**27.8**	ND>10	ND>10	40**
BTEX+MTBE		**39,463.**	**27.8**			-

V.G.E.S. - Vermont Groundwater Enforcement Standards

* - Maximum Contaminant Level

** - Health Advisory Level

ND> - None Detected Above Stated Limits

TBQ - Trace, below quantitation limits

ANALYSIS BY EPA METHOD 602

up-gradient from the site and is therefore not likely at risk of impact from petroleum contamination from the subject property . No residences or other buildings, other than one of the bus sheds, are located down-gradient from the area of the former USTs.

A supply well serving the Chamberlain Residence is located approximately 250 feet northeast from the area of the former UST. The water source is located significantly upgradient and therefore is not likely at risk of impact from subsurface petroleum contamination at the subject property. A supply well serving the two on-site bus sheds is located 65 feet west of the area of the former UST location. The well is not down-gradient from the area of subsurface petroleum contamination but could be at risk from impact if the well was in high demand. However, water from the bus shop supply well is only used for washing busses, not for human consumption.

V. CONCLUSIONS

On the basis of this investigation, Griffin has concluded the following:

1) There have been releases of petroleum to the subsurface at this site in the past. The amounts and durations of the releases are unknown. Both diesel fuel and gasoline releases appear to have occurred. The source of the diesel fuel release(s) appears to have been from tank overfills.

2) Soils at this site consist of silty sands near the surface overlying sand with pebbles and sand with pebbles and cobbles. Groundwater apparently flows south at a gradient of 3.0 percent.

3) Significantly contaminated soils have been excavated from the area of the former UST. In addition, all significantly contaminated soils have been excavated in the area between the bus shed and paved lot area and the South Wheelock Branch. Contaminated soils remain under the bus shed and paved lot areas.

4) Groundwater quality in the area of the former USTs appears to have significantly improved. No petroleum compound were indicated by analysis of the water sample collected from MW1 in this area. A very low concentrations (below VGES) of MTBE was indicated by analysis of the water sample collected from MW3. MTBE is at least 20 times more water soluble than other gasoline compounds. Therefore, MW1 is likely at the furthest westerly edge of the groundwater affected by residual petroleum contamination. No petroleum compounds were detected in MW4 or MW5 which suggest the contamination has not migrated from the area of the former UST towards the east or southeast.

5) Contamination has migrated down gradient from the area of the former USTs. BTEX and MTBE were indicated in concentrations well above VGES by analysis of the water sample collected from MW2.

6) No potential receptors were found to be significantly impacted by petroleum contamination at the site.

7) The bus shed supply well may be at risk of impact from contaminated groundwater at the site if the well is placed in high demand, but water from the well is not consumed by humans. The removal of a significant volume of contaminated soil from the subsurface between the area of the former UST and the South Wheelock Branch should significantly reduce the risk to the brook. No other potential receptors appear to be at risk from impact of subsurface petroleum contamination at the Chamberlain Bus Service facility.

8) Since no source remains, contaminant concentrations should gradually be reduced by the natural processes of dilution, dispersion, and biodegradation.

VI. RECOMMENDATIONS

On the basis of the above conclusions, Griffin recommends the following:

1) If the on-site bus shop supply well is ever to be used for human consumption, a water sample should be collected from the well at that time and analyzed for petroleum compounds according to EPA Method 602.

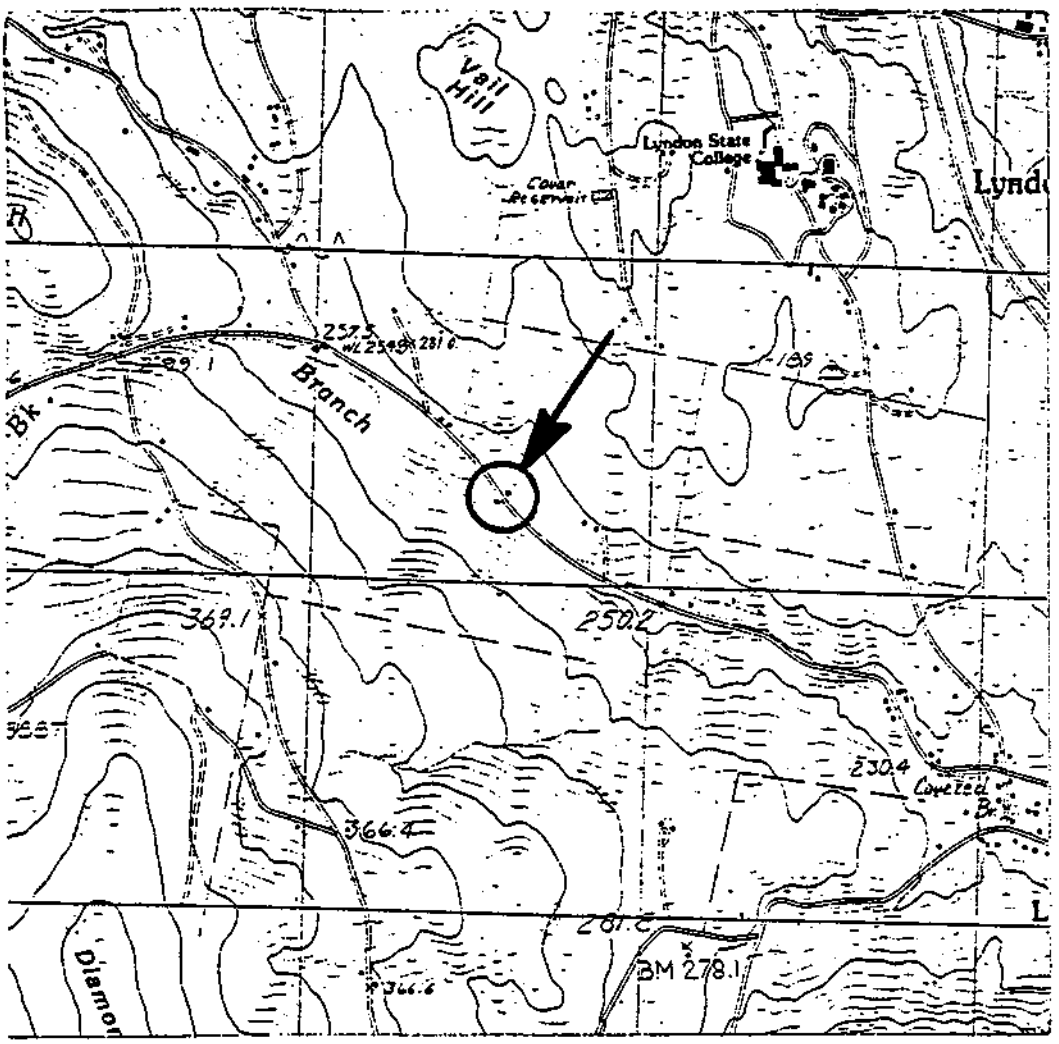
2) To document a trend of groundwater quality improvement at the site, Griffin recommends that monitoring wells MW1, MW2, and MW3 be resampled in Spring of 1995.

3) The 78 cubic yard soil stockpile should be screened annually with a PID to document passive remediation of petroleum compounds in the soil. After no petroleum compounds are detectable by PID, the soil stockpile should be spread and seeded at the site after approval from VTDEC.

4) Active remediation at this site is not recommended at this time.

APPENDIX A

SITE LOCATION MAP
SITE MAP
GROUNDWATER CONTOUR MAP



JOB #: 6944527
SOURCE: USGS- LYNDONVILLE, VERMONT QUADRANGLE

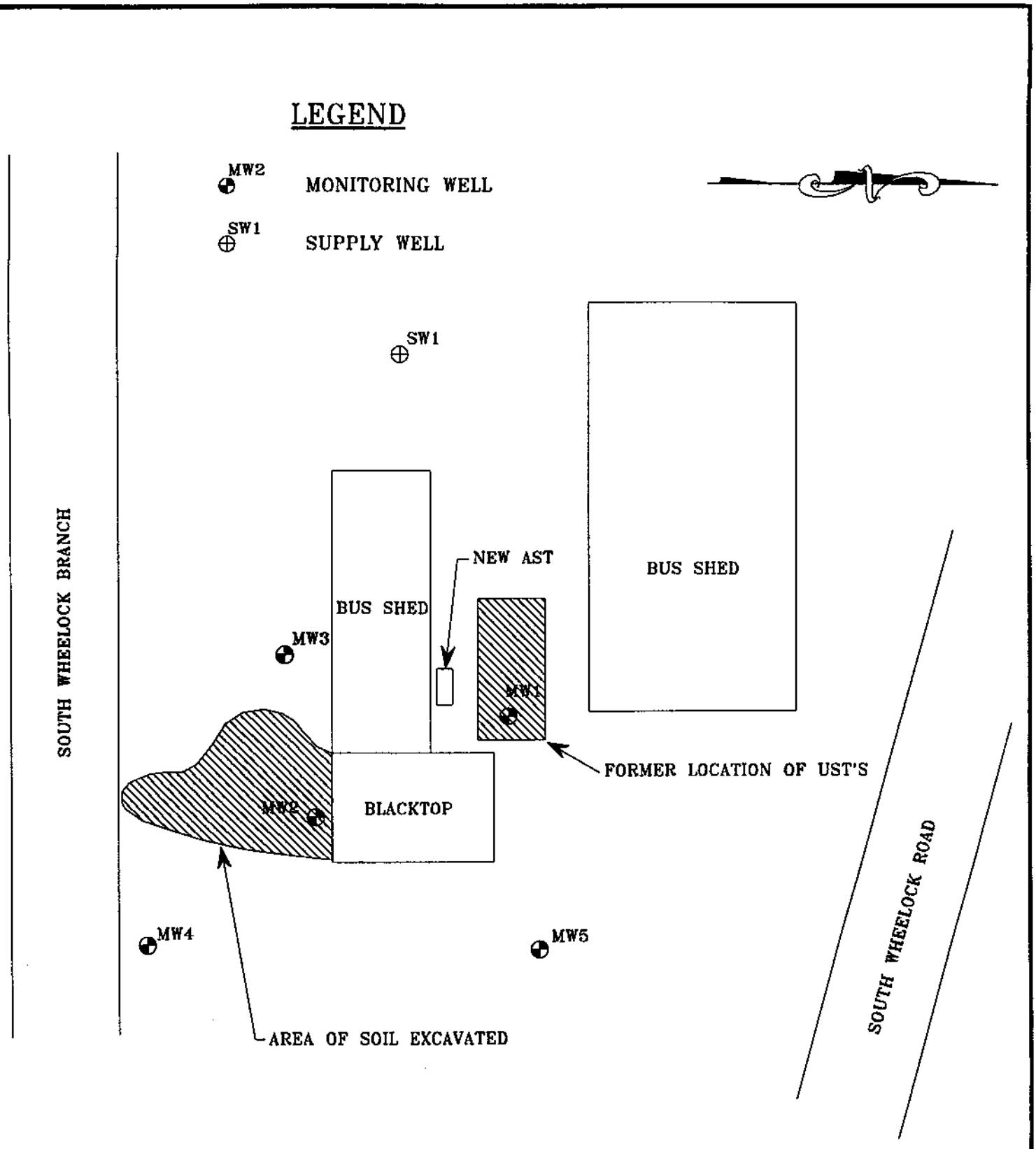
GRIFFIN INTERNATIONAL

CHAMBERLAIN BUS

LYNDON, VERMONT

SITE LOCATION MAP

DATE 6/28/94	DWG # 1	SCALE 1:24000	DRN: SB	APP: E-



JOB #: 6944539

GRIFFIN INTERNATIONAL INC

CHAMBERLAIN BUS

LYNDON, VERMONT

SITE MAP

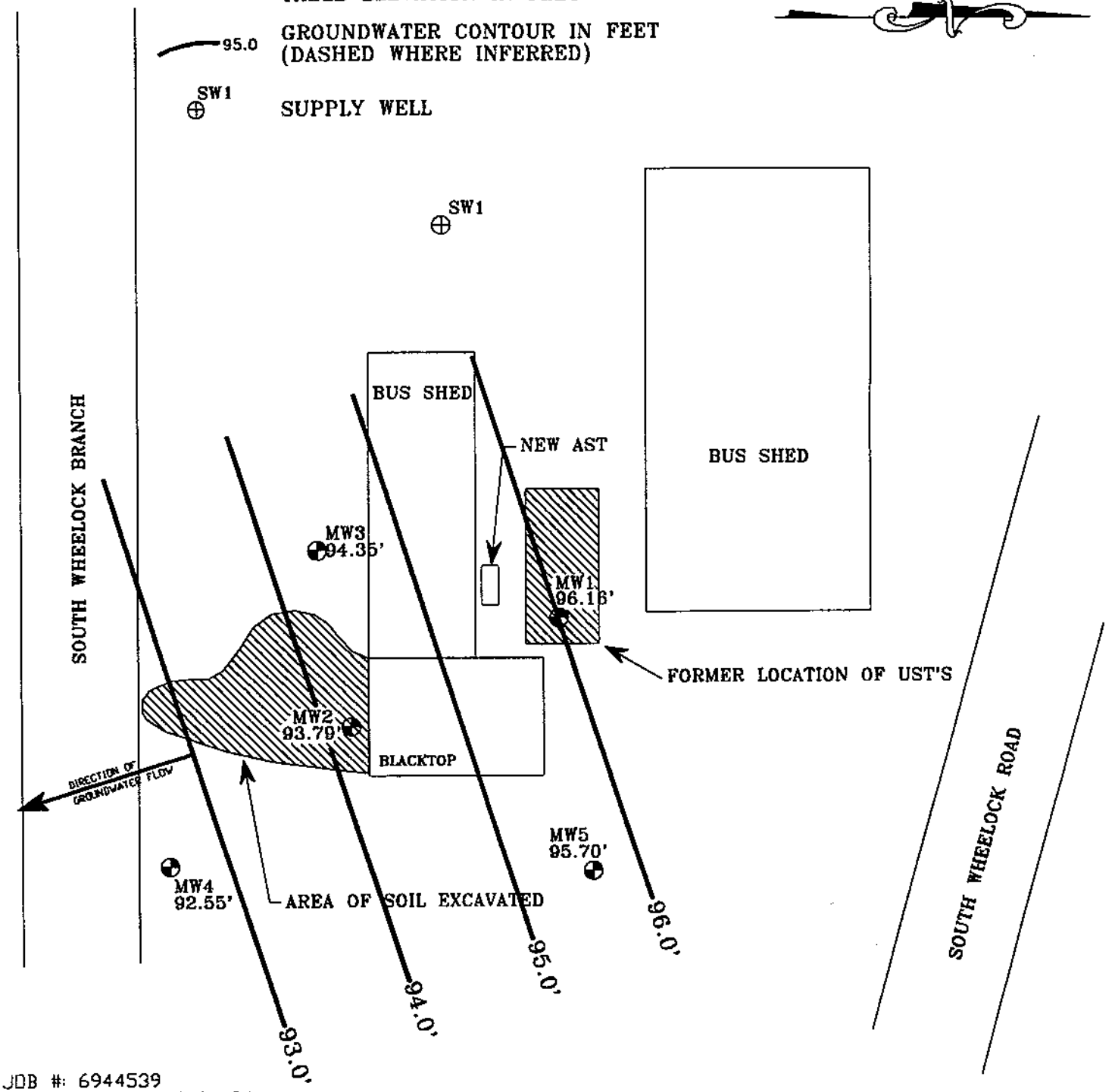
DATE: 8/10/94	DWG.#: 2	SCALE: 1"=30'	DRN.: SB	APP.: EH

LEGEND

MW2 93.79' — MONITORING WELL AND WATER TABLE ELEVATION IN FEET

95.0 — GROUNDWATER CONTOUR IN FEET (DASHED WHERE INFERRED)

SW1 — SUPPLY WELL



JOB #: 6944539
DATE MEASURED: 7/21/94

GRIFFIN INTERNATIONAL INC

CHAMBERLAIN BUS

LYNDON, VERMONT

GROUNDWATER CONTOUR MAP

DATE: 8/10/94	DWG.#: 3	SCALE: 1"=30'	DRN.: SB	APP.: EH

APPENDIX B

DRILLING LOGS

PROJECT CHAMBERLAIN BUS SERVICE

LOCATION LYNDON, VERMONT

DATE DRILLED 6/24/94 TOTAL DEPTH OF HOLE 10'

DIAMETER EXCAVATED PIT

SCREEN DIA. 2" LENGTH 8' SLOT SIZE 0.010"

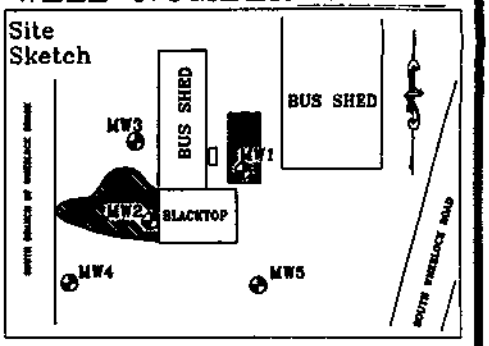
CASING DIA. 2" LENGTH 1.5' TYPE sch 40 pvc

DRILLING CO. GOSLYN DRILLING METHOD BACKHOE

DRILLER JOHN LOG BY E. HODGES

WELL NUMBER MW1

Site Sketch



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX			0
0		LOCKING WELL CAP			0
0		CONCRETE			0
1					1
2		WELL RISER		Brown silty SAND, well graded, moist.	2
3					3
4		NATIVE BACKFILL			4
5				5.5' WATER TABLE	5
6		WELL SCREEN	5'-6' 9 ppm 6'-7' 105 ppm	SAND and GRAVEL	6
7				SAND	7
8					8
9		BOTTOM CAP			9
10				BASE OF WELL AT 10' END OF EXPLORATION AT 10'	10
10		UNDISTURBED NATIVE SOIL			10
11					11
12					12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

PROJECT CHAMBERLAIN BUS SERVICE

LOCATION LYNDON, VERMONT

DATE DRILLED 6/24/94 TOTAL DEPTH OF HOLE 10'

DIAMETER EXCAVATED PIT

SCREEN DIA. 4" LENGTH 8' SLOT SIZE 0.010"

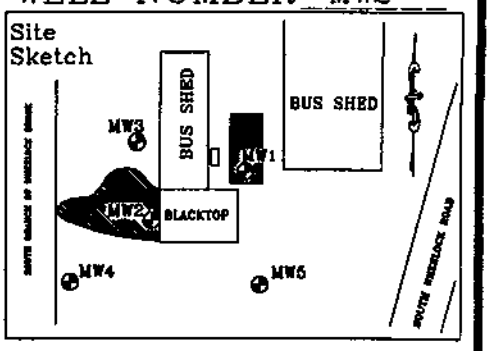
CASING DIA. 4" LENGTH 1.5' TYPE sch 40 pvc

DRILLING CO. GOSLYN DRILLING METHOD BACKHOE

DRILLER JOHN LOG BY E. HODGES

WELL NUMBER MW2

Site Sketch



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX LOCKING WELL CAP CONCRETE			0
1					1
2		WELL RISER		Brown silty SAND, moist.	2
3					3
4		NATIVE BACKFILL			4
5				5.5' WATER TABLE	5
6		WELL SCREEN	4'–7' 230 ppm	Coarse SANDS and GRAVELS, pet. stained, wet. Sheen present on infiltrating groundwater.	6
7			7'–8' 10 ppm		7
8				Brown SILT with blue clay present, moist.	8
9		BOTTOM CAP			9
10				BASE OF WELL AT 10' END OF EXPLORATION AT 10'	10
11		UNDISTURBED NATIVE SOIL			11
12					12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

WELL NUMBER MW3

PROJECT CHAMBERLAIN BUS SERVICE

LOCATION LYNDON, VERMONT

DATE DRILLED 6/24/94 TOTAL DEPTH OF HOLE 10'

DIAMETER EXCAVATED PIT

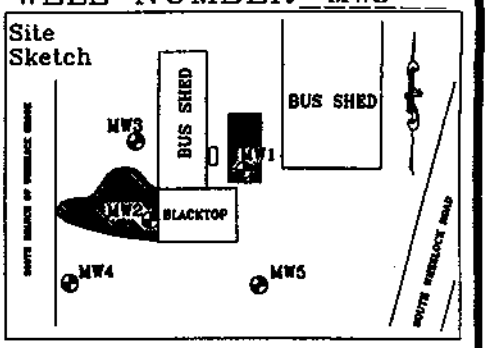
SCREEN DIA. 2" LENGTH 9' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 0.5' TYPE sch 40 pvc

DRILLING CO. GOSLYN DRILLING METHOD BACKHOE

DRILLER JOHN LOG BY E. HODGES

Site Sketch



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX LOCKING WELL CAP CONCRETE			0
1			0'–3' ND	Brown silty SAND.	1
2		WELL RISER			2
3					3
4		NATIVE BACKFILL	3'–5' ND	Brown SAND.	4
5				5.0' WATER TABLE ▼	5
6		WELL SCREEN	5'–7' ND	Gray SAND and GRAVEL.	6
7					7
8			7'–10' ND	Coarse BOULDERS and GRAVEL.	8
9		BOTTOM CAP			9
10				BASE OF WELL AT 10' END OF EXPLORATION AT 10'	10
11		UNDISTURBED NATIVE SOIL			11
12					12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

PROJECT CHAMBERLAIN BUS SERVICE

LOCATION LYNDON, VERMONT

DATE DRILLED 6/24/94 TOTAL DEPTH OF HOLE 10'

DIAMETER EXCAVATED PIT

SCREEN DIA. 2" LENGTH 8' SLOT SIZE 0.010"

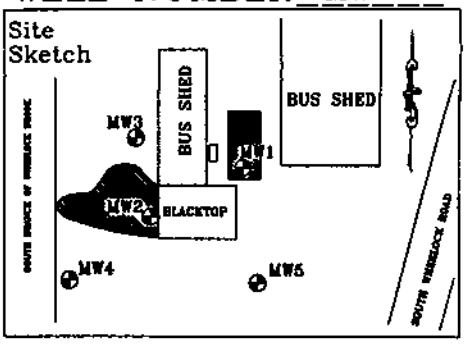
CASING DIA. 2" LENGTH 1.5' TYPE sch 40 pvc

DRILLING CO. GOSLYN DRILLING METHOD BACKHOE

DRILLER JOHN LOG BY E. HODGES

WELL NUMBER MW4

Site Sketch



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX LOCKING WELL CAP CONCRETE			0
1				Brown silty SAND.	1
2		WELL RISER			2
3					3
4		NATIVE BACKFILL			4
5			5' ND	5.0' WATER TABLE ▼	5
6		WELL SCREEN		Gray SAND and GRAVEL	6
7					7
8				Coarse SAND, GRAVEL and BOULDERS	8
9		BOTTOM CAP			9
10			10' ND	BASE OF WELL AT 10' END OF EXPLORATION AT 10'	10
11		UNDISTURBED NATIVE SOIL			11
12					12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

WELL NUMBER MW5

PROJECT CHAMBERLAIN BUS SERVICE

LOCATION LYNDON, VERMONT

DATE DRILLED 6/24/94 TOTAL DEPTH OF HOLE 10'

DIAMETER EXCAVATED PIT

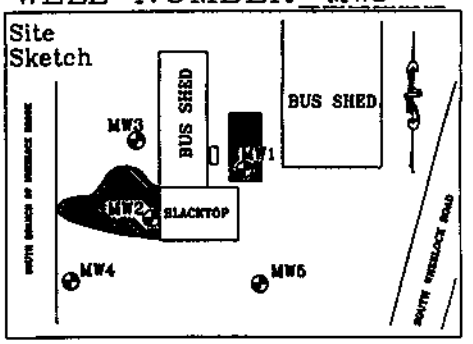
SCREEN DIA. 2" LENGTH 8' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 1.5' TYPE sch 40 pvc

DRILLING CO. GOSLYN DRILLING METHOD BACKHOE

DRILLER JOHN LOG BY E. HODGES

Site Sketch



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX LOCKING WELL CAP CONCRETE			0
1					1
2		WELL RISER		Silty SAND.	2
3					3
4		NATIVE BACKFILL			4
5				5.0' WATER TABLE	5
6		WELL SCREEN		Coarse SAND, GRAVEL and COBBLES. Water present at 5'. Groundwater infiltration rate into hole very rapid.	6
7			4'–9' ND		7
8					8
9		BOTTOM CAP			9
10			9'–10' ND	Underground river present with a direction of flow east to west across site.	10
11		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 10' END OF EXPLORATION AT 10'	11
12					12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

APPENDIX C

WATER LEVEL DATA

Liquid Level Monitoring Data
Chamberlain Bus Service
Lyndon, Vermont

Monitoring Date:7/21/94

Well I.D.	Well Depth	Top of Casing Elevation	Depth To Product	Depth To Water	Corrected Water Table Elevation
MW-1	10.00	100.00	-	3.84	96.16
MW-2	10.00	97.94	-	4.15	93.79
MW-3	10.00	97.74	-	3.95	93.79
MW-4	10.00	96.62		4.07	92.55
MW-5	10.00	98.42		2.72	95.70

All Values Reported in feet

Elevations are based on Arbitrary Datum

NA - Not Available

APPENDIX D

LABORATORY RESULTS

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International
PROJECT NAME: Chamberlain Bus Service
REPORT DATE: August 4, 1994
DATE SAMPLED: July 21, 1994

PROJECT CODE: GICB1201
REF.#: 62,261 - 62,268

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated samples were preserved with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times. All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method. Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Chamberlain Bus Service
REPORT DATE: August 4, 1994
DATE SAMPLED: July 21, 1994
DATE RECEIVED: July 22, 1994
ANALYSIS DATE: August 3, 1994

PROJECT CODE: GICB1201
REF.#: 62,261
STATION: Trip Blank
TIME SAMPLED: 8:00
SAMPLER: Becca Schuyler

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	1	ND[1]
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 97%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:
1 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Chamberlain Bus Service
REPORT DATE: August 4, 1994
DATE SAMPLED: July 21, 1994
DATE RECEIVED: July 22, 1994
ANALYSIS DATE: August 3, 1994

PROJECT CODE: GICB1201
REF.#: 62,262
STATION: MW1
TIME SAMPLED: 11:45
SAMPLER: Becca Schuyler

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	1	ND[1]
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 96%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 2

NOTES:
1 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Chamberlain Bus Service
REPORT DATE: August 4, 1994
DATE SAMPLED: July 21, 1994
DATE RECEIVED: July 22, 1994
ANALYSIS DATE: August 3, 1994

PROJECT CODE: GICB1201
REF.#: 62,263
STATION: MW5
TIME SAMPLED: 12:00
SAMPLER: Becca Schuyler

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	1	ND[1]
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 95%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:
1 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Chamberlain Bus Service
REPORT DATE: August 4, 1994
DATE SAMPLED: July 21, 1994
DATE RECEIVED: July 22, 1994
ANALYSIS DATE: August 3, 1994

PROJECT CODE: GICB1201
REF.#: 62,264
STATION: MW4
TIME SAMPLED: 12:35
SAMPLER: Becca Schuyler

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	1	ND[1]
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 97%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:
1 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Chamberlain Bus Service
REPORT DATE: August 4, 1994
DATE SAMPLED: July 21, 1994
DATE RECEIVED: July 22, 1994
ANALYSIS DATE: August 3, 1994

PROJECT CODE: GICB1201
REF.#: 62,265
STATION: MW3
TIME SAMPLED: 12:50
SAMPLER: Becca Schuyler

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	1	ND[1]
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	27.8

Bromobenzene Surrogate Recovery: 97%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:
1 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Chamberlain Bus Service
REPORT DATE: August 4, 1994
DATE SAMPLED: July 21, 1994
DATE RECEIVED: July 22, 1994
ANALYSIS DATE: August 3, 1994

PROJECT CODE: GICB1201
REF.#: 62,266
STATION: MW2
TIME SAMPLED: 13:05
SAMPLER: Becca Schuyler

Parameter	Detection Limit (ug/L)[1]	Concentration (ug/L)
Benzene	50	633.
Chlorobenzene	50	ND[2]
1,2-Dichlorobenzene	50	ND
1,3-Dichlorobenzene	50	ND
1,4-Dichlorobenzene	50	ND
Ethylbenzene	50	2,560.
Toluene	50	8,250.
Xylenes	50	21,300.
MTBE	500	6,720.

Bromobenzene Surrogate Recovery: 107%

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

NOTES:

1 Detection limit raised due to high levels of contaminants. Sample run at 2% dilution.

2 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Chamberlain Bus Service
REPORT DATE: August 4, 1994
DATE SAMPLED: July 21, 1994
DATE RECEIVED: July 22, 1994
ANALYSIS DATE: August 3, 1994

PROJECT CODE: GICB1201
REF.#: 62,267
STATION: Duplicate of MW2
TIME SAMPLED: 13:05
SAMPLER: Becca Schuyler

Parameter	Detection Limit (ug/L)[1]	Concentration (ug/L)
Benzene	50	675.
Chlorobenzene	50	ND[2]
1,2-Dichlorobenzene	50	ND
1,3-Dichlorobenzene	50	ND
1,4-Dichlorobenzene	50	ND
Ethylbenzene	50	2,680.
Toluene	50	8,770.
Xylenes	50	22,100.
MTBE	500	7,480.

Bromobenzene Surrogate Recovery: 108%

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

NOTES:

1 Detection limit raised due to high levels of contaminants. Sample run at 2% dilution.

2 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Chamberlain Bus Service
REPORT DATE: August 4, 1994
DATE SAMPLED: July 21, 1994
DATE RECEIVED: July 22, 1994
ANALYSIS DATE: August 3, 1994

PROJECT CODE: GICB1201
REF.#: 62,268
STATION: Equipment Blank
TIME SAMPLED: 11:50
SAMPLER: Becca Schuyler

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	1	ND[2]
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 94%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:
1 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

EPA METHOD 602 LABORATORY REPORT

MATRIX SPIKE AND DUPLICATE LABORATORY CONTROL DATA

CLIENT: Griffin International
PROJECT NAME: Chamberlain Bus Service
REPORT DATE: August 4, 1994
DATE SAMPLED: July 21, 1994
DATE RECEIVED: July 22, 1994
ANALYSIS DATE: August 3, 1994

PROJECT CODE: GICB1201
REF.#: 62,262
STATION: MW1
TIME SAMPLED: 11:45
SAMPLER: Becca Schuyler

Parameter	Sample(ug/L)	Spike(ug/L)	Dup1(ug/L)	Dup2(ug/L)	Avg % Rec
Benzene	ND[1]	10	8.9	8.9	89%
Toluene	ND	10	8.9	8.8	88%
Ethylbenzene	ND	10	9.1	9.0	90%
Xylenes	ND	30	26.6	26.6	89%

NOTES:
1 None detected

ENDYNE, INC.

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333

CHAIN-OF-CUSTODY RECORD

10946

Project Name: Chamberlain Bus Service Site Location: S. Wheelock, VT	Reporting Address: Groff	Billing Address: Groff
Endyne Project Number: GICB1201	Company: Contact Name/Phone #:	Sampler Name: Becca Schuyler Phone #: 865 4228

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 7-21-94	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
6[illegible]261	Trip Blank	H_2O	X		8:00	2	40mL		602	HCl	
6[illegible]262	MW1				11:45						
6[illegible]263	MW5				12:00						
6[illegible]264	MW4				12:35						
6[illegible]265	MW3				12:50						
6[illegible]266	MW2				13:05						
6[illegible]267	~~Trip~~ Duplicate of MW2				13:05						
6[illegible]268	Equipment Blank				11:50						

Relinquished by: Signature Becca Schuyler	Received by: Signature Tom M. Chapman	Date/Time 7/22/94 11:00 a.m.
Relinquished by: Signature	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										